

CLAIMS

1. A cooling and/or heating device (10, 60) with a heating or cooling unit (8a, 8b, 8c) or several heating or cooling units (8a-8c), with a conduit network having flow conduits and return conduits (14, 16; 68, 70), with several circuits (12a-12c; 32-38; 74-78) that are connected to the flow conduits and return conduits (14, 16; 68, 70), with at least one valve (28, 88, 96) in each circuit for adjusting the volumetric flow through the circuits (12a-12c; 32-38; 74-78), with a fluid that serves as the heat transfer medium or coolant in the conduit network, and with at least one consuming device (22) in each circuit (12a-12c; 32-38; 74-78), characterized by the fact that the valves (28, 88, 96) are connected to a control unit (40) for adjusting the passage openings of the valves (28, 88, 96), by the fact that sensors (38) are provided in the individual circuits (12a-12c; 32-38; 74-78), and by the fact that the sensors (38) form part of a control circuit of the control unit (40) that adjusts the valves (28, 88, 98) as a function of the signals transmitted from the sensors (38) to the control unit such that hydraulic balancing between the individual circuits (12a-12c; 32-38; 74-78) is achieved.

2. The cooling and/or heating device according to Claim 1, characterized by the fact that the sensor (38) consists of a temperature or pressure sensor.

3. The cooling and/or heating device according to Claim 1 or 2, characterized by the fact that one respective sensor (38) is provided upstream and one downstream of the consuming device (22).

4. The cooling and/or heating device according to one of the preceding claims, characterized by the fact that hydraulic balancing is adjusted by the control unit (40) at certain time intervals and in predetermined increments with respect to the extent of the adjustment of the passage opening of the valve (28, 88, 96).

5. The cooling and/or heating device according to one of the preceding claims, characterized by the fact that the valve (28, 88, 96) in the circuit (12a-12c; 32-38; 74-78) forms the only flow restrictor of the circuit (12a-12c; 32-38; 74-78) over a predetermined adjustment range of the valve (28, 88, 96).

6. The cooling and/or heating device according to one of the preceding claims, characterized by the fact that the valves (28, 88, 96) in the conduit network form the only flow restrictors of the conduit network over a predetermined adjustment range of the valve (28, 88, 96).

7. The cooling and/or heating device according to one of the preceding claims, characterized by the fact that the valve (28, 88, 96) cooperates with a servomotor (26) that receives its control signals (56) from the control unit (40) and moves the actuator of the valve (28, 88, 96) into the position defined by the control signal (56).

8. The cooling and/or heating device according to one of the preceding claims, characterized by the fact that the valve (28, 88, 96) is designed such that it does not act as a flow restrictor/throttle when its passage is completely open.

9. The cooling and/or heating device according to one of the preceding claims, characterized by the fact that the control unit (40) has a first control circuit (42, 46) for regulating the temperature and a second control circuit (38, 48, 52) for regulating the hydraulic balancing of the circuits.

10. The cooling and/or heating device according to Claim 9, characterized by the fact that the control unit (40) is provided with a minimum selector (40) that is connected to the outputs of the control circuits (42, 46; 38, 48, 52) such that the control signals (50, 54) for the valve (28, 88, 96) or the valves (28, 88, 96) resulting from both control circuits (42, 46; 38, 48, 52) are fed to the control unit (40) via a minimum selector (44) and the valve (28, 88, 96) assumes the minimal setting if different control signals are received.